

Problem Solving with Percents

Name

Key

3rd/4th (B)

1. If the sales tax rate is $5\frac{1}{2}\%$, what is the sales tax on a jacket priced at \$45.89?

$$45.89 \times 5\frac{1}{2}\% = \$2.52 \quad \$2.53$$

2. Kay had \$75 in a savings account. The interest rate is 7%. How much does she have in her account at the end of one year?

$$75 \times .07 = 5.25 \rightarrow 75 + 5.25 = \$80.25$$

3. If George earns $13\frac{1}{2}\%$ commission on his sales, how much does he earn on sales of \$2042.98?

$$2042.98 \times 13.5\% = \$275.80$$

4. Paul has \$324 in his savings account, which earns 12.25% interest annually. What is his new balance after 9 months (assuming the bank pays simple interest)?

$$324 \times 12.25\% \times .75 = 29.71 + 324 = \$353.71$$

5. The regular price of a microwave oven is \$289.59. What is the sale price if it is discounted 20%?

$$289.59 \times .20 = 57.92 \quad 289.59 - 57.92 = 231.67$$

6. What is the amount of interest earned when \$2275 is invested at 18% for $3\frac{1}{2}$ years?

$$2275 \times .18 \times 3.5 = \$1,433.25$$

7. If a house valued at \$65,000 increases in value by 9%, what is the new value of the home?

$$65,000 \times .09 = 5,850 + 65,000 = \$70,850$$

8. Tonya saved \$800 toward the cost of a racing bike. If the bike costs \$1,342 plus 6% sales tax, how much will Tonya need to borrow in order to buy it?

$$1342 \times .06 = 80.52$$

$$1342 + 80.52 = 1422.52 - 800 = 622.52$$

9. Mrs. Anderson's insurance company refunds 80% of medical expenses. How much money will she get back for expenses of \$462.50?

$$462.5 \times .8 = \$370$$

10. Ben saved \$12 by buying a car radio at a 15% discount. What was the original price?

$$A \times .15 = 12 \quad A = 80$$

11. Rachel paid \$270 in simple interest when she borrowed money at 15% for 18 months. How much did she borrow?

$$270 = (P)(.15)(1.5) \rightarrow 270 = .225P \rightarrow \frac{270}{.225} = \frac{.225P}{.225} \rightarrow \$1200 = P$$

12. A company pays its employees a bonus of 2.5% of sales. A \$150 bonus is awarded for what amount of sales?

$$\frac{150}{2.5} = \frac{2.5\%}{2.5} \rightarrow 6,000 = X$$

$$150 = .025X$$

$$6,000 = X$$

13. Lewis Construction Co. made a profit of \$832 on a remodeling project for which the company received \$5,200. What was the percent of profit?

$$\frac{832}{5200} = 16\%$$

14. Last month, Sally's phone bill was \$32.50 and \$20.15 of this was for long distance calls. What percent of the bill was for long distance calls?

$$\frac{20.15}{32.50} = 62\%$$

15. A bicycle that sells for \$149.95 is on sale for 22% off. Estimate the sale price.

$$150 \times \frac{1}{5} \text{ off} = 30 \quad 150 - 30 = 120 \quad 150 \times \frac{4}{5} = 120$$

16. 18 is about what percent of 76?

$$20 \approx \% \times 80 \quad \frac{20}{80} \approx \% \quad \frac{1}{4} = 25\%$$

17. 22 is about what percent of 45?

$$22 \approx \% \text{ of } 44 \quad \frac{22}{44} \approx \% \quad \frac{1}{2} = 50\%$$

18. A big screen TV is on sale for 33% off of \$1,499. Find the total price you would pay if there is a 6% sales tax.

$$1499 \times .33 = 494.67 \quad 1499 - 494.67 = 1004.33 \quad 1004.33 \times .06 = 60.26 \text{ tax}$$

19. Your bill at the Angus Barn was \$357.24. Mentally calculate what a 15% tip would be.

$$\begin{array}{r} \$360 \\ 10\% \quad 36 \\ 5\% \quad 18 \\ \hline \$54 \end{array}$$

20. The 8% sales tax on Jackie's restaurant bill was \$3.18. Estimate the tip if she tipped 15% of the bill.

$$\begin{array}{r} 3.18 = .08 \times B \\ 39.75 = \text{Bill} \\ 3.18 \text{ tax} \\ \hline \$42.93 \leftarrow \text{total meal cost} \end{array} \quad \begin{array}{r} 10\% = 4.30 \\ 5\% = 2.15 \\ \hline \$6.45 \text{ tip} \end{array}$$

Simplify: $\frac{(11-3)^2}{10-8} - 2 \times 4$

$$\frac{(8)^2}{2} - 2 \times 4$$

$$\frac{64}{2} - 8$$

$$\frac{32-8}{2} = 12$$